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PTO Form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

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| Sheet | 1 | of | 12 | Attorney Docket Number | 24519.6.8402 |
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| Application Number | 10/669,162 |
| Filing Date | September 22, 2003 |
| First Named Inventor | Ronald R. Breaker, et al. |
| Art Unit | 1635 |
| Examiner Name | Zara, Jane J. |
| Attorney Docket Number | 24519.6.8402 |

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| Examiner Initials* | Cite No. ¹ | Document Number | Publication Date MM-DD-YYYY | Name of Patentee or Applicant of Cited Document | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear |
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Dated: April 22, 2009

Signature: Leslie Maisano (Leslie Maisano)

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| | | | | First Named Inventor | Ronald R. Breaker, et al. |
| | | | | Art Unit | 1635 |
| | | | | Examiner Name | Zara, Jane J. |
| Sheet | 2 | of | 12 | Attorney Docket Number | 24519.6.8402 |

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| Examiner Initials | Cite No. ¹ | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | T ² |
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| | | | | First Named Inventor | Ronald R. Breaker |
| | | | | Art Unit | 1635 |
| | | | | Examiner Name | J. J. Zara |
| Sheet | 8 | of | 12 | Attorney Docket Number | 24519.6.8402 |

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| | CK | Kiga, D., et al., An RNA aptamer to the xanthine/guanine base with a distinctive mode of purine recognition. Nucleic Acids Res. 26: 1755-1760 (1998) | |
| | CL | Laimins, L., et al., Osmotic control of kdp operon expression in Escherichia coli. PNAS, 78: 464-8 (1981) | |
| | CM | Langer et al., Enzymatic synthesis of biotin-labeled polynucleotides: novel nucleic acid affinity probes. PNAS, 78: 6633 (1981) | |
| | CN | Lusky, M.L., et al., Bovine papilloma virus contains an activator of gene expression at the distal end of the early transcription unit. Mol. Cell Bio., 3: 1108 (1983) | |
| | CO | Massie et al, Construction of a helper-free recombinant adenovirus that expresses polyomavirus large T antigen. Mol. Cell. Biol., 6: 2872-2883 (1986) | |
| | CP | Patte, J.C., Biosynthesis of lysine and threonine. In: Escherichia coli and Salmonella: Cellular and Molecular Biology, F.C. Neidhardt, et al., eds, Vol 1, pp 528-541 (1996) | |
| | CQ | Pearson and Lipman, Improved tools for biological sequence comparison. PNAS, 85: 2444 (1988) | |
| | CR | Pease et al., Light-generated oligonucleotide arrays for rapid DNA sequence analysis. PNAS, 91(11): 5022-5026 (1994) | |
| | CS | Ragot et al., Replication-defective recombinant adenovirus expressing the Epstein-Barr virus (EBV) envelope glycoprotein gp340/220 induces protective immunity against EBV-induced lymphomas in the cottontop tamarin. J. Gen. Virology, 74: 501-507 (1993) | |
| | CT | Rodionov, D.A., et al., Comparative genomics of thiamin biosynthesis in procaryotes. New genes and regulatory mechanisms. Journal of Biological chemistry, 277: 48949 (2002) | |

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| | CU | Roth, A., Breaker, R.R., Selection in vitro of allosteric ribozymes. In: Methods in Molecular Biology Series - Catalytic Nucleic Acid Protocols (Sioud, M, ed.) Humana, Totowa, NJ (2003) | |
| | CV | Seth et al., Role of a low-pH environment in adenovirus enhancement of the toxicity of a Pseudomonas exotoxin-epidermal growth factor conjugate. J. Virol., 51: 650-655 (1984) | |
| | CW | Seth et al., Evidence that the penton base of adenovirus is involved in potentiation of toxicity of Pseudomonas exotoxin conjugated to epidermal growth factor. Mol. Cell. Biol., 4: 1528-1533 (1984) | |
| | CX | Soukup, G.A., Breaker R.R., Allosteric Ribozymes. In: Ribozymes: biology and Biotechnology. R.K. Gaur and G. Krupp eds Eaton Publishing (2000) | |
| | CY | Svensson and Persson, Role of vesicles during adenovirus 2 internalization into HeLa cells. J. Virology, 55: 442-449 (1985) | |
| | CZ | Tatusov, R.L., et al., The COG database: new developments in phylogenetic classification of proteins from complete genomes. Nucleic Acids Res. 29: 22-28 (2001) | |
| | CA1 | Usher and McHale, Hydrolytic stability of helical RNA: a selective advantage for the natural 3', 5'-bond. PNAS, 73: 1149-1153 (1976) | |
| | CB1 | Varga et al., Infectious entry pathway of adenovirus type 2. J Virology, 65: 6061-6070 (1991) | |
| | CC1 | Mandal et al. "A Glycine-Dependent Riboswitch That Uses Cooperative Binding to Control Gene Expression", Science 08 October 2004, Vol. 306, pages 275-279. | |
| | CD1 | Vitreschak et al., "Riboswitches: the oldest mechanism for the regulation of gene expression?", Trends in Genetics, January 2004, Vol. 20, No. 1, pages 44-50. | |

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| | CE1 | Tucker et al., "Riboswitches as versatile gene control elements", current Opinion in Structural Biology, 2005, Vol. 15, pages 342-348. | |
| | CH1 | Winkler and Breaker, Genetic control by metabolite-binding riboswitches. Chem BioChem 4(10): 1024-32 (2003) | |
| | CI1 | Nahvi et al., Genetic control by a metabolite binding mRNA. Chem Biol vol 9, page 1043 (2002) | |
| | CJ1 | Winkler et al., Control of gene expression by a natural metabolite-responsive ribozyme. Nature 428(6980): 281-6 (2004) | |
| | CK1 | Antson et al, The structure of trp RNA-binding attenuation protein. Nature vol 374, page 693 (1995) | |
| | CL1 | Barrick et al., New RNA motifs suggest an expanded scope for riboswitches in bacterial genetic control. PNAS USA vol 101, page 6421 (2004) | |
| | CM1 | Kikuchi, The glycine cleavage system: composition, reaction mechanism, and physiological significance. Mol Cell Biochem. Vol 1, page 169 (1973). | |
| | CN1 | Duce et al., The glycine decarboxylase system: a fascinating complex. Trends Plant Sci vol 6, page 167 (2001) | |

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| | CO1 | Sudarsan et al., An mRNA structure in bacteria that controls gene expression by binding lysine. Genes Dev vol 17, page 2688 (2003). | | |
| | CP1 | Winkler et al., An mRNA structure that controls gene expression by binding S-adenosylmethionine. Nat Struct Biol vol 10, page 701 (2003). | | |
| | CQ1 | Mandal and Breaker, Adenine riboswitches and gene activation by disruption of a transcription terminator. Nature Struct Mol Biol vol 11, page 29 (2004). | | |
| | CR1 | Nahvi et al., Coenzyme B ₁₂ riboswitches are widespread genetic control elements in prokaryotes. Nucleic Acids Res, vol 32, page 143 (2004). | | |
| | CS1 | Yarnell and Roberts, Mechanism of intrinsic transcription termination and antitermination. Science vol 284, page 611 (1999). | | |
| | CT1 | Baugh, C., et al., 2.8 Å crystal structure of the malachite green aptamer. J. Mol. Biol. 301: 117-128 (2000) | | |
| | CU1 | Fan et al., Molecular recognition in the FMN-RNA aptamer complex. J. Mol. Biol. 258: 480-500 (1996) | | |
| | CV1 | Koizumi, M., et al., Allosteric selection of ribozymes that respond to the second messengers cGMP and cAMP. Nature Struct. Biol. 6: 1062-1071 (1999) | | |
| | CW1 | Serganov, A., et al., Structural basis for discriminative regulation of gene expression by adenine- and guanine-sensing mRNAs. Chem. Biol. 11: 1729-1741 (2004) | | |
| | CX1 | Batey, R.T. et al., Structure of a natural guanine-responsive ribswitch complexed with the metabolite hypoxanthine. 18:432: 411-415 (2004) | | |

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| | CY1 | Jenison et al. High resolution molecular discrimination by RNA. Science 263: 1425-1429 (1994) | |
| | CZ1 | Morris et al., Distributed automated docking of flexible ligands to proteins: Parallel applications of Autodock 2.4. Journal of Computer Aided Molecular Design 10: 293-304 (1996) | |
| | CA2 | Kubodera et al. Thiamine-regulated gene expression of Aspergillus oryzae thiA requires splicing of the intron containing a riboswitch-like domain in the 5'UTR. FEBS Lett 555: 516-520 (2003) | |
| | CB2 | Matlin et al. Understanding alternative splicing: Towards a cellular code. Nature 6: 386-398 (2005) | |
| | CD2 | Klein et al. Structural basis of blmS ribozyme activation by glucosamine-6-phosphate. Science 313: 1752-1756 (2006) | |
| | CE2 | Blount et al. Development and application of a high-throughput assay for Glms riboswitch activators. RNA Biology 3(2): 77-81 (2006) | |
| | CF2 | 24519.6.8402 Prosecution History for application U.S. 11667153 up to 11.28.2007 | |
| | CG2 | 24519.6.8402 Prosecution History for European application 03781294 up to 05.12.2008 | |

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